

Assignment 8-9 Integer Multiplication 4

The problem is to multiply two integers a and b . ($0 \leq a, b < 10^{250}$)

Input

The input consists of t ($30 \leq t \leq 40$) test cases. The first line of the input contains only positive integer t . Then t test cases follow. Each test case consists of two lines which give the two integers a and b ($0 \leq a, b < 10^{250}$).

Output

For each test case, you are to output a single line containing the product of a and b .

Sample Input

```
3
10
3
4
0
0
8
```

Sample Output

```
30
0
0
```

Part of the program

You are required to write the function `multiplication` to complete the following program which solves this problem. In your program, you cannot declare global variables or static arrays.

```
#include <iostream>
#include <cstring>
using namespace::std;

class HugeInt
{
public:
    int size;
    int *digit;

    // product = multiplicand * multiplier
    void multiplication( HugeInt multiplier, HugeInt &product );
};
```

```

};

int main()
{
    char strA[ 251 ], strB[ 251 ];

    int T;
    cin >> T;
    for( int t = 0; t < T; ++t )
    {
        cin >> strA >> strB;

        HugeInt multiplicand;
        multiplicand.size = strlen( strA );
        multiplicand.digit = new int[ multiplicand.size ];
        for( int i = 0; i < multiplicand.size; ++i )
            multiplicand.digit[ i ] = strA[ multiplicand.size - 1 - i ] - '0';

        HugeInt multiplier;
        multiplier.size = strlen( strB );
        multiplier.digit = new int[ multiplier.size ];
        for( int i = 0; i < multiplier.size; ++i )
            multiplier.digit[ i ] = strB[ multiplier.size - 1 - i ] - '0';

        HugeInt product;
        multiplicand.multiplication( multiplier, product );

        for( int i = product.size - 1; i >= 0; i-- )
            cout << product.digit[ i ];
        cout << endl;
    }
}

// product = multiplicand * multiplier
void HugeInt::multiplication( HugeInt multiplier, HugeInt &product )
{

```